approach

AUGUST 1978 THE NAVAL AVIATION SAFETY RE

CARQUALS are regularly conducted by reserve squadrons. Here, a pilot from VA-205 hones his carrier landing skills.

Why are the RESERVES safer?

By Richard P. Shipman
APPROACH Writer

MAJOR COMMAND ACCIDENT RATES

	FY 78	77	76	75	74
NAVAIRRES	.24	.19	.20	.45	.49
NATRACOM	.41	.54	.35	.31	.36
NAVAIRLANT	.76	.43	.62	.77	.72
NAVAIRPAC	.64	.69	.90	.88	.97
MARTC	1.02	.57	.77	1.15	.97
FMFLANT	1.47	1.18	1.30	1.35	.75
FMFPAC	1.12	1.01	.65	.73	1.16
NAVAIRSYSCOM	.41	1.39	1.65	1.88	1.95

Fig.1.

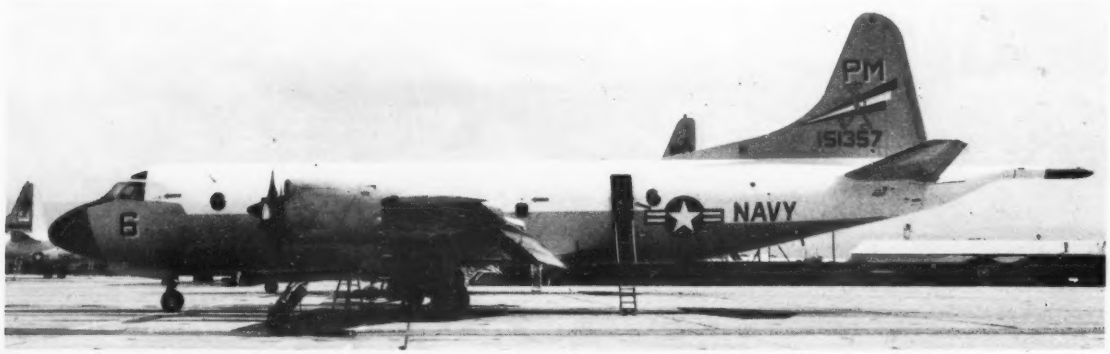
THE NAVAL Air Reserve flies safely. In fact, year in and year out the Naval Air Reserve flies more safely than any other major operational command in the Navy. Over the past 10 years, the Naval Air Reserve has had the best safety record, every year, of the major operational commands. It has also had the best safety record of *all* commands, including Training, in 6 of those 10 years. As of June 1978 (see Fig. 1), CNAVRES is once again at the top spot for safety honors over the past 12 months, sporting an accident rate almost twice as good as its nearest competitor.

One might expect that the positive and negative factors of reserve type flying would balance out and the reserve's safety record would be comparable to other commands. On the positive side, the reserves have experienced, motivated pilots, and they don't deploy on aircraft carriers for extended periods. However, they fly infrequently, in older aircraft, while flying a variety of challenging missions such as day and night carquals, ACM, and weapons deployments. How, then, does one account for the reserve's unusually good safety record? More importantly, are there lessons to be learned from the reserves that might be applied to other commands' safety performance?

To answer that question, the people closest to the situation – the reserve squadron safety officers – were contacted. Here are some excerpts from their responses to the question "Why are the reserves safer?"

LCDR George Melnyk: VC-12 (TA-4J). "The obvious reason is a high experience level in the squadron ['ain't no nuggets here']. The average flight time for a pilot in VC-12 is 2500 hours, and average time in type is 1300 hours. Experience counts in the maintenance area as well. In VC-12, 95 percent of the aircraft maintenance is performed by the 47 TAR Group 9 personnel onboard. Thirty of these people (64 percent) are E-5 or above.

"To gain an insight into some of the not so obvious reasons for our good safety record, you have to look at the reserve mission – train personnel to be ready to augment the regular Navy in a time of national emergency. The reserves must always be ready, but they don't have a 'deadline' hanging over their heads. Because of this, the reserve aviator is more apt to cancel a launch because of a borderline aircraft discrepancy or marginal weather than his active duty counterpart. Most reservists left their 'blind' dedication to 'operational commitments' behind when they



Reserve patrol squadrons have the luxury of launching with all 3 pilots onboard being designated PPCs.

left active duty. This is not to say that reservists aren't dedicated – they just realize that anything that's scheduled today can be rescheduled tomorrow, and 6 months from now, nobody will remember. And it definitely isn't worth having an accident or incident or even a close call over."

LCDR J. R. Miller: VFP-206 (RF-8G). "A look at the pilot roster of any reserve squadron shows the enormous experience level of the reserve aviator. The average total hours, landings, traps, and combat sorties of the reserve squadron far exceed those of its active duty counterpart. This substantial experience level spawns a high degree of confidence so essential to safe flying. This confidence level is important to the aviator, for uncertainty in the cockpit can be fatal.

"Closely associated with experience is maturity. The average reserve pilot is older than his active duty counterpart and it can be realistically assumed, more mature. He is less likely to pull 'stunts' than the less mature aviator. The reservist has undoubtedly gone through that stage, survived, and learned that unauthorized maneuvers and longevity are not compatible.

"The reserve pilot is more inclined not to violate the rules. This is not because of an altruistic motive so much as it is the abhorrence of a flight violation on his record. The average reserve squadron is composed of a high percentage of commercial airline pilots. The airline/reserve pilot is particularly reluctant to put himself in a position that could jeopardize his career as a pilot, and thus is more cautious than someone without this motivation. This cautiousness is possibly the single most important factor in the excellent safety record of the reserves. The reserve pilot realizes that the 8 to 10 hours of flight time he gets each month is the bare minimum to maintain proficiency. As a result, he remains alert for any situations that could get him into trouble."

LCDR William H. Siren: VP-91 (P-3). "The calibre of personnel in the naval air reserve – both officer and enlisted – is truly impressive. Consider the credentials of the ASW crew listed in Fig. 2. These crewmembers were singled out for their obvious qualifications, but there are many other people in VP-91 with outstanding credentials and advanced degrees. In addition, of the squadron's 45 assigned pilots, 34 (or about 75 percent) are airline pilots. These individuals bring a genuine safety commitment to the reserve program.

"On a drill weekend, and on extra drills, these dedicated people bring synergism to their working environment which enhances motivation and pride, and consequently, safety. Safety standards from a myriad of occupations seem to be beneficially filtered and reinforced in the pursuit of training and readiness.

"Many factors combine to promote safety in the reserves, including less operational flying and the increased motivation from voluntary affiliation. The reserve program fills a wide range of needs for its affiliates (financial, social, self-fulfillment, etc.), and the rewards of the program bring involvement and performance enhancement. But professionalism and experience stand out. This talent is present throughout the naval reserve and contributes to the selected air reserve being the bellwether in naval aviation safety."

The experience, motivation and quality of TAR maintenance personnel are significant factors in providing the reserves with safe aircraft.

LCDR Robert C. Chandler: VR-51 (C-118B). "High morale and motivation are contributing factors. Reservists participate in the program of their own choice; military

CREW POSITION	NAME	CREDENTIALS
PILOT	CDR SAM McWILLIAMS	MASTER OF BUSINESS ADMINISTRATION DEGREE. AIRLINE PILOT, 15,000 HOURS FLIGHT TIME. REAL ESTATE SALESMAN.
PILOT	LCDR DAVE CLAUDE	JURIS DOCTOR. PRACTICING ATTORNEY. REAL ESTATE BROKER.
PILOT	LCDR JERRY JOBE	MASTER OF BUSINESS ADMINISTRATION DEGREE. FINANCIAL ANALYST, LINEAR ACCELERATOR CENTER. AIRLINE PILOT.
PATROL PLANE NAVIGATOR	LCDR STEVE HUGGARD	BACHELOR OF SCIENCE IN AERONAUTICS. JURIS DOCTOR. PRACTICING ATTORNEY.
PATROL PLANE TACTICAL COORDINATOR	LCDR STAN LUNDGAARD	MASTER OF BUSINESS ADMINISTRATION DEGREE. CHARTERED LIFE UNDERWRITER. INSURANCE BROKER.
FLIGHT ENGINEER	AD1 JOEL BOTTERO	COPILOT, SUPPLEMENTAL AIRLINE. FAA LICENSES: AIRLINE TRANSPORT PILOT (B-727 TYPE RATING), FLIGHT ENGINEER (TURBOJET, TURBOPROP, RECIPROCATING RATINGS).
FLIGHT COMMUNICATIONS OPERATOR	AT2 PHILLIP DEAVER	MASTER OF SCIENCE, ELECTRICAL ENGINEERING. DESIGN ENGINEER.
SENSOR STATION NO. 1 (ACOUSTIC OPERATOR)	AW2 RICHARD BARBEZAT	BACHELOR OF SCIENCE, ELECTRONICS ENGINEERING (MASTERS CANDIDATE). SUSTAINING ENGINEER FOR DISPLAY SYSTEM, F-16 AIRCRAFT. DESIGNING HEADS-UP DISPLAY FOR F-18 AIRCRAFT.
SENSOR STATION NO. 2 (ACOUSTIC OPERATOR)	AW2 RUSSELL DOLLINGER	Ph.D. CANDIDATE. DISSERTATION TOPIC: "THE AUTORADIOGRAPHIC LOCALIZATION OF GANGLIOSIDES AND THEIR SYNTHETIC SITES IN THE CENTRAL NERVOUS SYSTEM." PUBLISHED ARTICLE IN TECHNICAL JOURNAL.
SENSOR STATION NO. 3 (NONACOUSTIC OPERATOR)	AW2 ROGER BUSBEE	MASTER OF SCIENCE, ELECTRICAL ENGINEERING. AIRBORNE TELEMETRY ENGINEER.
ORDNANCEMAN	AO1 WILLIAM CHRISTENSEN	OWNER OF A FLOOR-COVERING COMPANY. 32 YEARS IN THE NAVAL RESERVE. THREE YEARS EXPERIENCE IN WORLD WAR II.

Fig. 2. "Profile of a Reserve ASW flightcrew."

An F-4 *Phantom* from Reserve Fighter Squadron VF-202 makes a stop at the "fuel pits" after returning from a "sortie" during the recent Naval Reserve Fighter Meet at NAS Miramar.

obligations have long been fulfilled. Crewmembers are not forced to complete missions. They are there to do the job safely; 'do-it-or-else' situations never arise. The fact that the reserve program is not a full-time occupation deters complacency – each flight is approached conscientiously. Liberal extra drill policies and good drill pay are additional motivation.

"However, the main contributing factor to safety is the reservist's option of saying 'no' more easily than his active duty counterpart."

LCDR Johnny Bittick: VF-202 (F-4N). "Lack of persistent, long term exposure to the CV environment is a factor. Although we do go on carrier deployments, it is much easier to keep pumped up for a 2-week cruise or carrier qualification period than it is for an 8-month cruise. The percentages pay off eventually with continued, routine operations in high hazard conditions.

"A relatively stable workforce is also a tremendous asset. Relearning all the old lessons is not as much a problem. Being able to go home to a wife and the kids after work also enhances general morale and mental attitudes, even in the midst of high tempo operations, long working hours, and no days off.

"Although our long term goals and priorities are established in the same manner as the Fleet, our daily operational decisions are established inhouse, without external pressure from the CAG/ship. There is not the same pressure to throw that 'cripple' in the flight schedule to keep from canceling a sortie."

LCDR J. H. Barton: VA-204 (A-7B). "Since accidents are caused predominately by people, the answer lies in the people who man reserve squadrons. The maintenance people in reserve squadrons are more experienced than their counterparts in the Fleet. This is a result of three factors:

- Reserve squadron aircraft have been around longer, allowing personnel more time to have acquired experience in them. For example, you will find more experienced A-7 personnel than F-14 personnel available to a detailer.
- Men are assigned to reserve squadrons for longer terms. The tremendous number of transfers which occur due to sea/shore rotations are a detriment to the experience level of Fleet squadrons.
- TAR maintenance personnel are highly motivated. It is a voluntary program and they are happy to be in it. They work together well.

LCDR Tony Martin: VA-205 (A-7B). "The reserve aviator in a tactical squadron averages somewhere around 130 hours per year which is comparable with that flown by his active duty counterpart. But while the active duty aviator is involved in performing his collateral duties, the reserve pilot is likely to be flying a DC-9, B-727, or whatever, an additional 60 to 75 hours per month. Whether it be on the airways or in a 45-degree bombing run, time spent in cockpits must surely allow the pilot to be more in tune with what is happening around him, resulting in a safer, more efficient operation.

"The environment of the reserve squadron itself is generally more stable than fleet squadrons with no extended cruises to continually adjust to. Such upheavals, when combined with other factors, can lead to deterioration of a pilot's performance. The reserve squadron is also more stable because turnover in flight crews is minimal. There are no rotations to and from sea duty. When replacements do come, they are not nuggets, and they are already familiar with our operating procedures, having come from our replacement unit. The result is that we fly for many years with the same leaders/wingmen out of the same airfield [excluding deployments – we went on seven last year]."

LCDR E. J. P. Duffy: VR-52 (C-118). "Our unit may be unique in the amount of safety expertise and variety of safety resources available to it. In addition to safety training identical to that found in active duty squadrons and directed by three graduates of Monterey's Safety School, we have the contribution of civil aviation safety specialists from the National Transportation Safety Board, Airline Pilots Association, and general aviation, as well as an FAA Air Traffic Controller. The constant safety training that five scheduled air carriers give to members of our unit provides further variety to the resources that are at our disposal. The depth and variety of safety exposure assures a high level of interest on the part of the unit."

Reserve fighter squadrons such as VF-202 do plenty of ACM, but there's no pressure to make the launch if unsafe conditions exist.

Despite flying old RF-8Gs, VFP-206 has gone over 5000 hours without an accident.

LCDR R. K. Meeker: VP-65 (P-3). "In a reserve force patrol squadron, almost all the pilots are prior designated fleet patrol plane commanders (PPCs). When a flight is launched, it will have three pilots onboard who are all PPCs. Unfortunately, active duty squadrons are not afforded this luxury.

"There are also more officers trying to join the reserve flying program than there are billets available. This oversupply allows the force squadrons to pick and choose new personnel. This greatly enhances the motivation of the officers presently in the program. They either stay current and contribute or they are replaced."

Summarizing the comments of the safety officers results in the following list of reasons why the reserves fly safer, ranked in approximate order of importance:

1. Experience level of the pilots/NFOs.
2. Tempered "can-do" spirit; less pressure to fly if marginal conditions exist.
3. Lack of long term exposure to day and night CV operations.
4. Influence of airlines.
5. Voluntary and competitive nature of the program leads to motivation and lack of complacency.
6. Quality and motivation of TAR maintenance personnel.
7. Stable workforce; less upheaval in personnel, location, and working conditions.
8. More emphasis on flying and less on administrative work.

Can the active duty squadron learn any lessons from the reserve's excellent safety record? Some reasons the reserves are safe are simply a function of their unique nature (airline influence, no long term CV ops). There are other factors, however, that active duty commands might well want to consider.

- **Pilot experience level**: The active duty squadrons cannot avoid the nugget. But does the experienced aviator with one squadron tour under his belt *really* need a disassociated tour on his second sea duty? Could the Navy not avail itself better of the pilots' experience by giving them three sea tours in a squadron rather than the current two?

- **Operational commitments**: Squadron COs, ship captains, type commanders, and all staff personnel who task active duty squadrons might do well to reevaluate what the priorities really should be between "operational requirements" and safety.

- **Pilot accountability**: The large pool of aviators available to a reserve squadron and many reservists' fear of jeopardizing their full-time airline career breed a high degree of caution and flight discipline among reserve aviators. Increased accountability required of active duty aviators might dissuade them from challenging the grey areas of flight regulations and safe flight.

Whether or not reserve safety success reasons can be applied to active duty squadrons, the fact remains that the reserve force squadrons have enjoyed unparalleled safety success. And this outstanding safety record is vital to the preservation of aircraft and manpower required to meet the reserve's role of augmenting the regular navy in time of emergency. ◄

APPROACH is a monthly publication published by Commander, Naval Safety Center, Norfolk, VA 23511. Subscription price: $11.70 per year; $2.95 additional for foreign mailing. Subscription requests should be directed to: Superintendent of Documents, Government Printing Office, Washington, DC 20402. Controlled circulation postage paid at Richmond, VA.

HOW TO

RISK YOUR WINGS

IGNORANCE of the law is no excuse; we've heard that a million times. Just as unforgivable – although perhaps more understandable – is misinterpreting the law. Between ignorance and misinterpretation of the law (in this case, the laws of FAR Part 91 and OPNAV 3710), a jet pilot recently put his wings of gold in jeopardy. Here's how it happened.

The pilot was on a cross-country to an Air Force base. During landing, he observed some Air Force pilots executing "pitch outs" (a chandelle type maneuver similar to a Navy break). He interpreted this to be some "approved" showboating and mentally made plans to do a show of his own on departure.

Not being any more anxious to get a flight violation than the next guy, the young pilot made a trip to the air base air traffic control office and sought out a senior FAA representative. The pilot requested authorization from the rep for a low transition followed by an aileron roll after cleaning up. The FAA rep's alleged reply was, "Sure, go ahead. I just wish I could sell tickets!"

Bolstered with this "official" approval, the pilot proceeded to man up and execute his Sierra Hotel maneuver as planned. Unluckily for this jock, an Air Force aviator jogging in the vicinity of the runway noticed this unauthorized maneuver in the airport control zone and turned in a violation on the Navy pilot.

Did the Navy pilot *really* violate any regs? You bet he did! And not just one regulation, but several. Well, what about the "approval" from the FAA rep, you ask? The pilot may just as well have asked the shoeshine boy at the base barber shop for permission. NO ONE HAS AUTHORITY TO WAIVE FARs EXCEPT THE ADMINISTRATOR OF THE FAA (and a certain few selected individuals, such as the Director of Air Traffic Services, to whom he has delegated authority). Even then, the waiver must be requested in advance and approved in writing. Why the FAA rep, who should have been aware of this, "approved" the pilot's request is hard to understand.

Let's take a look at the regs this pilot violated. OPNAV 3710 defines aerobatic flight as "an intentional maneuver involving an abrupt change in an aircraft's attitude, or other maneuver requiring pitch/dive angles greater than 45 degrees, bank angles greater than 60 degrees, or

accelerations greater than 2G." FAR Part 91 and OPNAV 3710 both prohibit aerobatic flight 1) within a control zone, 2) over congested areas or open air assemblies of people, and 3) below 1500 feet above the highest obstruction to flight, and 4) when visibility is less than 3 miles (5 for OPNAV). This pilot was 3 for 4.

Although ignorance of the law is no excuse, this pilot – and probably some other Navy pilots around today – might share some misconceptions about flight regulations stemming from other areas of Navy flying. For instance, a pilot who was violated for a high speed, low altitude fly-by of a Navy airfield might well question why he never got into trouble for his low altitude, high speed fly-bys of the carrier during his last cruise. Well, that's a totally different ball game. A ship at sea in international waters is *not* in FAA-controlled airspace and is *not* subject to many of the rules and regulations applicable to a CONUS environment. Thus, the carrier CO has the authority to approve low passes through his control zone, and sometimes does as a morale booster for the maintenance troops and flight deck workers.

Similarly, the pilot involved in this incident might ask why he was written up for performing an aerobatic maneuver in a control zone when just about every Navy pilot does aerobatic maneuvers, according to the FAR definition, every time he makes a Homefield break. The answer here lies in OPNAV 3710, para 120, where aerobatic flight is defined. The break is specifically exempted from the aerobatic definition since it is a normal, necessary evolution described in the appropriate aircraft NATOPS Manuals.

The way to avoid misconceptions is to be very familiar with the regulations. And, once again, the regulation that is particularly pertinent is that *no one but the Administrator can waive the FARs* (except in a bonafide emergency). This includes FAA tower operators, ATC watch supervisors, bomb range spotting tower observers, etc., etc. Consider some other situations that can get you into trouble if you don't fully believe and adhere to this truism.

You are being vectored for a GCA at a joint use civilian/military field. Your aircraft is stabilized at 3000 feet, 220 KIAS when the controller directs you to increase your airspeed 50 knots for traffic spacing. Are you authorized to go up to 270 KIAS? No! You can give him 30 knots and stabilize at 250 KIAS, but the air traffic controller has *no authority* to waive the 250-knot speed limit below 10,000 feet.

Here's another one. Noise abatement procedures call for the pilot to "climb as rapidly as possible to 1500 feet." In your light loaded F-14, this could mean a 50-degree noseup climb. Well, you just violated FARs by performing an aerobatic maneuver (above 45 degrees of pitch) in a control zone. In a situation like this you have to use a little headwork. Navy fields used to the *Tomcat's* performance would probably not be upset by such a nose-high attitude, and there'd be no trouble. However, a civilian or Air Force field might choose to interpret this maneuver as "an intentional maneuver involving an abrupt change in an aircraft's attitude" and file the appropriate flight violation.

Realistically, the world is not populated by phalanxes of nit-picking regulation enforcers just waiting to give you a flight violation. But the fact remains, if you operate your aircraft in a manner that violates the rules, whether intentional or not, you are putting your flying status in jeopardy. In a bonafide emergency, you may, of course, take whatever action is necessary to ensure the safe operation of your aircraft. But you had better be able to make a good justification for your deviation. Doing an aileron roll after takeoff is difficult to justify on a flight safety basis.

So avoid risky situations by knowing the regs, adhering to them, and using plain ole good headwork. It may mean cancelling an airshow for the homefolks, but *nobody's* impressed by a grounded aviator – or a dead one.

Florida Thunderstorms

UPON bidding into Miami, the newcomer captain asked advice from an experienced captain on how best to fly Florida thunderstorms. The sage advice was, "In the morning when you are heading north from Miami and encounter thunderstorms, always turn to the west, but in the afternoon when you are heading south, always turn to the east."

The newcomer then asked, "Will this always avoid the storms?"

"No," said the voice of experience, "but it will keep the sun out of your eyes."

– Courtesy United Airlines *THE COCKPIT*

EASTERN SUNSETS

By LT William H. Powers, USN
VP-23

THE P-3 *Orion* is well known for its dependability and redundancy of systems. NATOPS procedures and safety briefs cover every emergency imaginable. With four fans and enough JP-4 to keep them turning through the night, complacency is commonplace.

After a passenger pickup at NAS Norfolk, our Lajes-bound flight proceeded as briefed. Outbound from Nantucket, platform and gyro failure indicated an inertial dump that would not realign. With confidence in a dependable AHRS system and a standby gyro to back it up, the transit continued routinely.

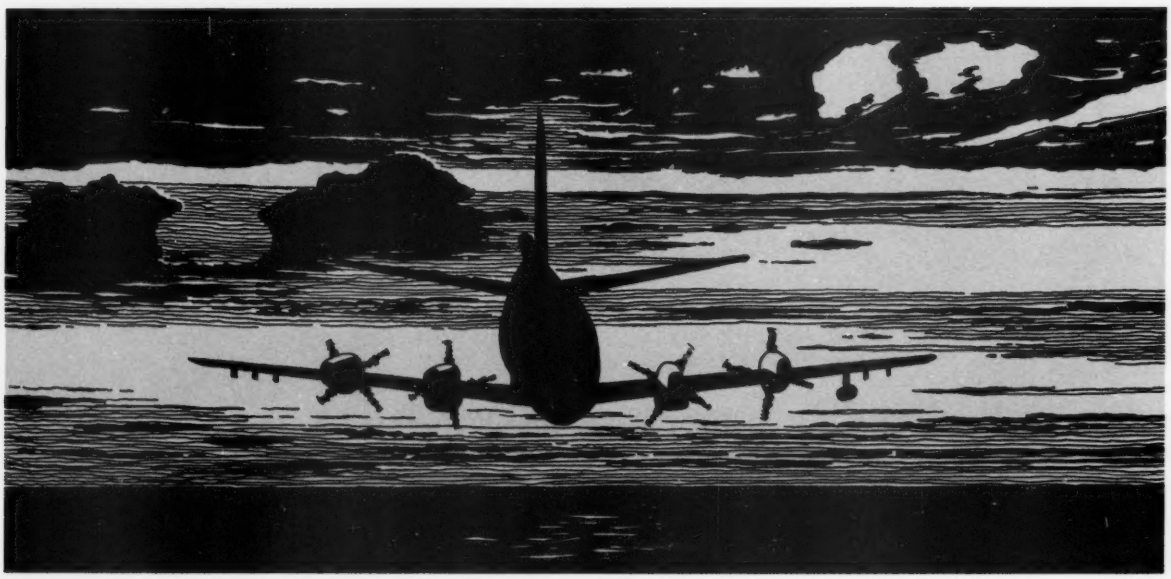
Several position reports later, heading fluctuations from the AHRS rekindled interest in the sick inertial which gave in to the copilot's efforts and was accepted in the pilot mode. The AHRS had now drifted over 90 degrees off heading and refused to sync. A brief discussion ensued concerning the wayward system while attempts were being made to revive it.

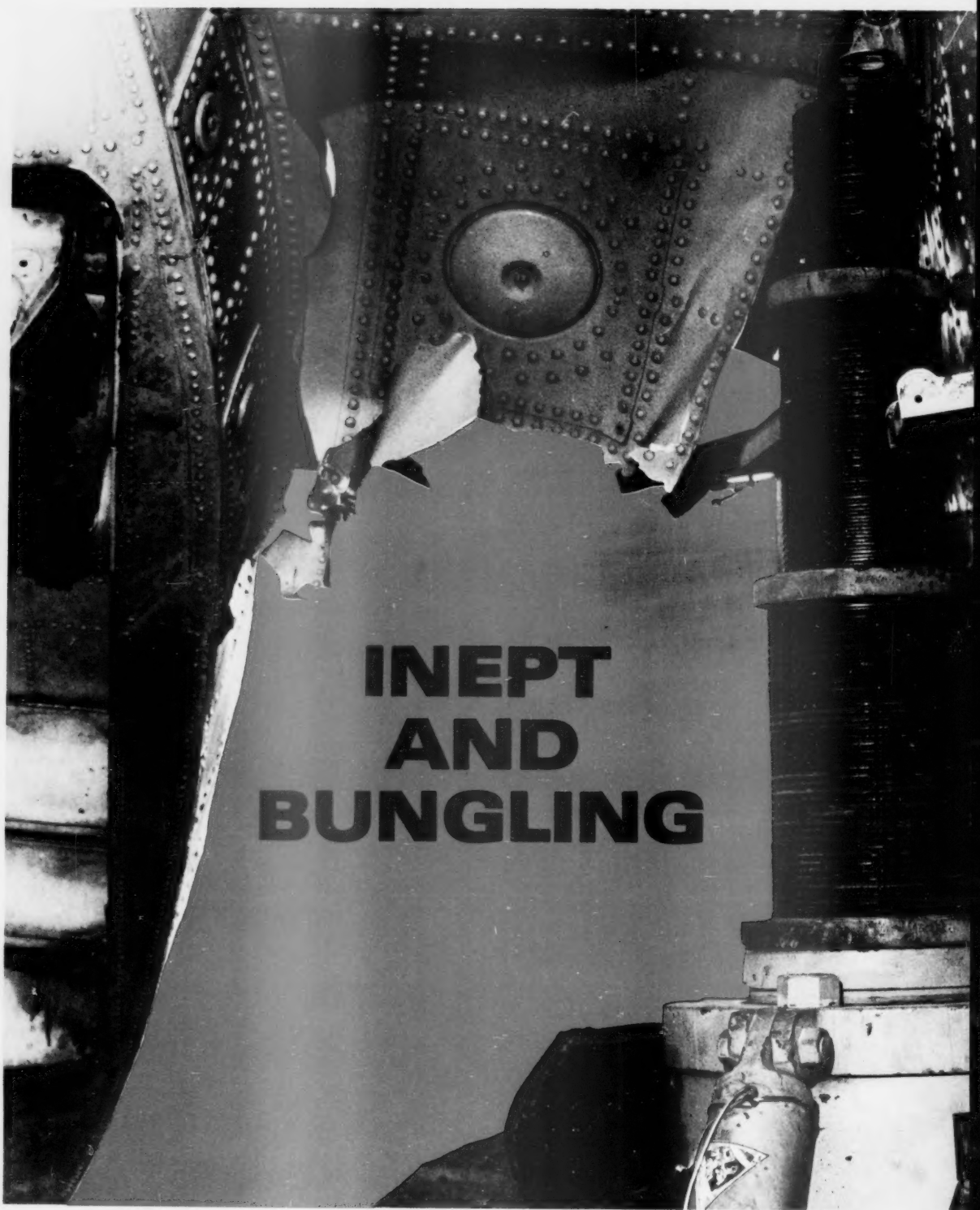
Pilots are not generally exposed to more than the basics of celestial navigation. Most can distinguish a planet from a star, and everyone knows that the sun sets in the west, a fact generally taken for granted except when your heading is supposed to be easterly and a beautiful sunset is in front of you.

It was quickly discovered that the inertial system had died again, leaving a frozen heading, while the autopilot had taken out after a precessing standby gyro.

You might say the pucker factor was on the rise. Although the AHRS gyro still looked good, the prospect of needle/ball, wet compassing the pond was not a cheery one. After a brief orbit and a few deep breaths, an emergency was declared and heading was altered toward the nearest point of land. Amazing things happen when the world finds out an aircraft is in trouble. Suddenly the radio is yours, clearances are instantaneous, and assistance is everywhere – an impressive display of professional help is set in motion.

It was comforting to know that celestial and LORAN were providing 4.0 fixing information throughout the flight and forecasters were calling the return route VFR. Shortly thereafter, an uneventful landing was made after an extremely eventful evening, but all the next day I kept wondering "what if . . . "




INEPT
AND
BUNGLING

A FLIGHT in an SH-3 was scheduled for a cross-country to Highground AFB with a fuel stop at NAS Bingo and a 5-minute passenger stop at River City. The first leg was flown IFR and took almost two and a half hours.

Three pilots and two crewmen were aboard. The HAC and one of the other two pilots had made the same trip previously. On the first leg, the HAC occupied the copilot's seat, and the junior of the three flew the helicopter. It was an uneventful flight. They landed, refueled, and launched on the second leg.

Actually, the takeoff on the second leg didn't go anywhere. They did get airborne, but didn't fly very far. The HAC had decided he would sit in a crewman's seat and let the other two fly the helicopter. The HAC cautioned the two pilots that since their density altitude was over 7000 feet and since they had fueled to capacity, they should make a running takeoff. The wind was north, less than 5 knots.

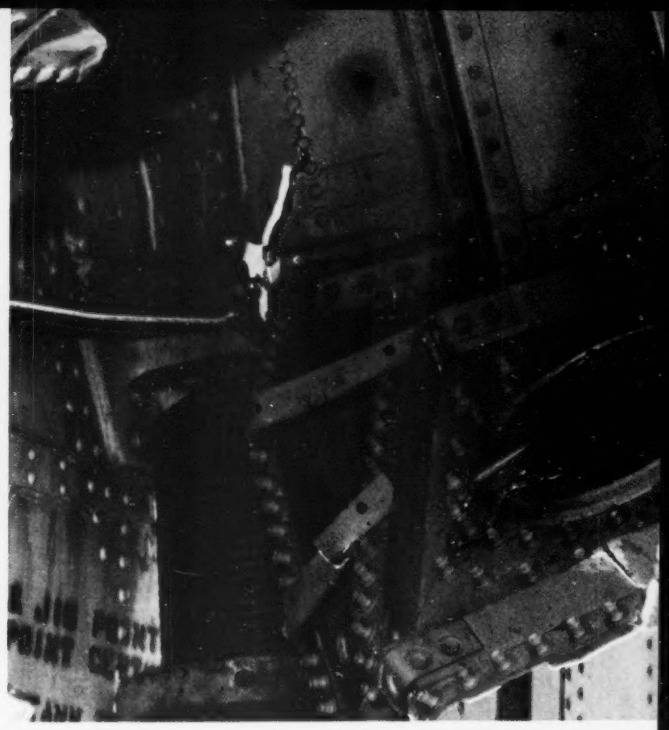
The senior of the two pilots in the cockpit advised the tower he was ready for takeoff and wanted an eastern departure. He was cleared to taxi to the helicopter pad and to depart on a heading of 070. Checklists were completed and away they rolled. After about 75 yards of roll, the pilot took off with 20 KIAS. The pilot kept the helo in ground effect while trying to accelerate.

Shortly after liftoff, there was an audible and visual confirmation of rotor droop to 96 percent. At the time there was about 80 yards of concrete ramp ahead of them. The copilot two-blocked the throttles and the pilot decreased collective slightly to try to get his turns up to 100 percent. However, the helicopter began to settle, and to complicate matters, a safe abort wasn't possible.

The pilot used almost all of the concrete in front of the helo. The ground at the end of the concrete where he was headed was about a foot lower than the ramp level. The ground then rose after the dip to about 2 feet above the ramp level. The pilot guessed he couldn't avoid the dip and rise. He was right.

The helo struck the hole in a right-wing-down, nose-up attitude in a right crab. The starboard mainmount made contact with the ground, twisted the main gear, broke the scissors, and damaged the stub wing and the strut fairing. The helicopter remained on the ground for 35 feet and then became airborne again.

The helicopter became unstable and the pilot saw the ASE was disengaged. It was reengaged and operated normally. The pilot air taxied to a closed taxiway and hovered while keeping the port main gear and tail gear on the deck. The HAC and crewmen evacuated to assist in attempts to provide something to support the starboard side of the helo, so that a shutdown could be conducted safely.



The crash crew and support personnel appeared on the scene. They tried in vain for an hour to support the helo with many different size jacks, pads, flat beds, mules, etc. Finally, a large jack was brought out, put in place, and the aircraft was shut down. The rotors were allowed to coast to a stop.

An investigation of the mishap revealed these facts:

- The pilot in command permitted two far less experienced pilots to occupy cockpit seats and attempt a takeoff under demanding conditions.
- Prior to departure from Homeplate, the CO had specifically counseled the HAC about high-density altitude operations and the lack of experience of his copilots for the flight.
- None of the pilots knew what their gross weight was at takeoff. In general all they knew was that they were heavy.
- None of the pilots consulted the NATOPS charts to determine takeoff conditions – as a matter of fact they didn't have a NATOPS manual with them.
- When questioned, none of the pilots knew what the safe single-engine speed was.
- The pilot at the controls had no prior high-altitude experience, and further hadn't flown for almost 2 months.
- The pilot at the controls didn't use the longest part of the concrete ramp for takeoff. He lined himself up with only one-third of the available takeoff area and departed on a heading which had rough terrain at the end of the ramp.

If this mishap wasn't true, few would believe it could happen. ◄

Anymouse

"The helo proceeded around an island and established a radar reference point from a well-identified landmark . . ."

When in Doubt, Holler!

IT was a night with no visible horizon. The mission was the first of four over-the-horizon targeting exercises with our trusty H-2 *Sea Sprite*. The EMCON procedures were discussed (ships radars and TACAN off with very limited use of UHF transmissions) and the scenario and force disposition were reviewed.

The flightcrew brief was thorough, and the aircraft launched on time. The helo proceeded around an island and established a radar reference point from a well-identified landmark. The mission involved intermittent sweeps of the radar to relay the surface picture to the Homeplate. After approximately 2 hours, the crew left station with sufficient fuel reserve for the return transit to Homeplate with some extra petrol for waveoffs and a buffer for mama and the kids.

A vector was requested from Homeplate which was given. It correlated with a radar contact, so off we went, no sweat. A few beads appeared, however, when upon arrival it was discovered that what was thought to be Homeplate was actually someone else (other combatant probably). No other ships were visible, and the closest radar contact was 14 miles away. Two requests for the ship to turn on her TACAN were ignored (EMCON requirements).

A quick fuel check established that there was enough to bingo to the island. Before the crew declared an emergency, they repeated their request once more and the TACAN was reluctantly turned on for one lock-on and secured. Fortunately, Homeplate was close enough (the radar contact at 14 miles), and the recovery was uneventful. The flightcrew was met immediately by the ship's Numero Uno who expressed considerable displeasure over the fact that the helo didn't know where it was (the helo knew where it was, but ship's company didn't know where the ship was) and needed assistance to get home. It appeared that there was far more concern about momentarily relaxing EMCON in a training environment than the fact that the aircraft was placed *in extremis*.

An open-ocean exercise would not have provided a piece of terra firma as an alternate. What saved the crew was planning adequate fuel reserve for unexpected delays. If the ship or the beach had been even further away, or if that extra fuel hadn't been tucked away, a night on a deserted beach or in the water might have been the crew's fate. The big lessons to be learned were that fuel burned won't get you anywhere; don't expect everything to go according to plan; and if you rely on and trust other people (even your friends) to keep you out of tight spots, you may have more than you bargained for.

Coveryourownsixmouse

Watch That First Step

I RECENTLY discovered that LAMPS pilots really do have human frailties. This revelation hit me in the leg, vice the face, when I slipped off the port auxiliary fuel tank of the SH-2F I was preflighting. I can give you very good details, for I used the half-hour on the sickbay journey to

The purpose of Anymouse (anonymous) Reports is to help prevent or overcome dangerous situations. They are submitted by Naval and Marine Corps aviation personnel who have had hazardous or unsafe aviation experiences. These reports need not be signed. Self-mailing forms for writing Anymouse Reports are available in readyrooms and line shacks. All reports are considered for appropriate action.

REPORT AN INCIDENT
PREVENT AN ACCIDENT

"Did you call?"

hash out my mistakes rather than watch the six stitches go into my leg.

My first mistake was to not ensure that the port engine inspection strap was in place as required by detachment SOP. The ship was not rolling badly, and I talked myself into a second mistake of using the inspection strap attachment points as handholds. As in all facets of life, the deck stability changed, and my third mistake was improper footing. I suddenly found myself following Newton's law of gravity when the ship took a 15-degree roll, and I went with it. I deftly extricated my fingers from the finger amputating attachment holes, but found a fourth mistake of not looking where I leaped.

It didn't take long to realize the error in my ways, for the main landing gear strut proved to be much harder than my leg.

As I hopped about the flight deck verbally abusing the main landing gear strut and its descendants, I came to the conclusion that it is wise to ensure personal safety prior to as well as in flight.

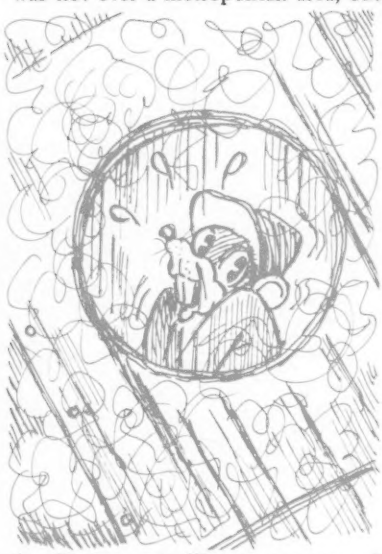
Hopalongmouse

No Brains

HAVE you ever experienced a feeling of such fright that you wanted to run, yet you can't because you're trapped. I had that feeling the other day when flying as a crewman in a C-130 four-engine turboprop.

We were cruising in VMC at 7000 feet when the plane commander ordered the copilot to climb through an overcast *without a clearance.* Now I'll admit the clouds weren't real thick, but we were climbing through them for a good 5 minutes. We broke out on top just about the time our clearance came through.

It was scary. I had visions of a midair with people and bits and pieces of metal falling out of the sky to the ground below. The area where we were was not over a metropolitan area, but



the Center controlling us was one of the busiest in the country.

Upon returning to the squadron I spoke to another crewman about the incident. He said the same pilot had pulled the same dumb stunt another time. I think that is irresponsible. We had a crew of 6 and 14 passengers aboard, and I don't know how many were aboard the other time.

Scaredymouse

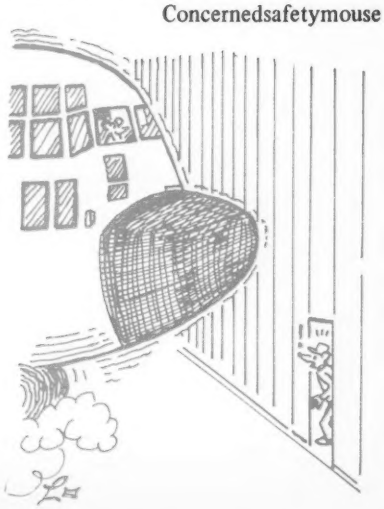
Too Close

ONE night while working, I heard a loud noise from a C-130 taxiing to the hangar. I looked out of the door and noticed that a *Herky Bird* was taxiing toward the hangar. The pilot continued to taxi the aircraft to a position just in front of the hangar. (By "just in front" I mean to a position where the nose of the radome was approximately nine paces from the hangar doors!) The plane commander was none other than the XO.

This was the second incident of this type within 2 weeks. The first incident involved the Ops officer and former AMO. The first incident was brought to the attention of the present AMO who in turn brought it to the attention of the CO. Both times, another aircraft was in the hangar for maintenance and I shudder to think what would have happened if the brakes suddenly malfunctioned while the aircraft was being taxied toward the hangar.

What kinds of examples are being set by these senior pilots who show such complete lack of concern for safety? It makes you wonder, if pilots don't worry about safety on the ground, whether they worry about safety in the air?

Concernedsafetymouse



"Who's gonna cut the COD?"
"Four Zero, Trader, Ball 1.8."
"Hows 'bout you, Lefty?"
"Nah, let Red cut it."
"Four Zero, Trader, Ball 1.8!"
"How about Dave, he's never cut the COD."
"Boss, COD Four Zero. How do you read?"
"You're loud and clear, COD."
"You got a ball there, COD?"
". . . forty ball."
"Roger Ball."
"I'll bet you a beer you can't cut him nosewheel over the one wire."
"The one wire?"
"Yeah, the Boss said he wants all the CODs on the one wire from now on."
"When did that come out?"
"This morning at breakfast."
"Oh."
"Does he look like he's deceling?"
"Yeah, give him a power call."

– CUT LIGHTS –

"Look at him settle . . .
. . . hold it up, COD . . .
"WAVE OFF! WAVE OFF!"

CUTTING THE COD

or "Pickle, pickle, who gets the pickle?"

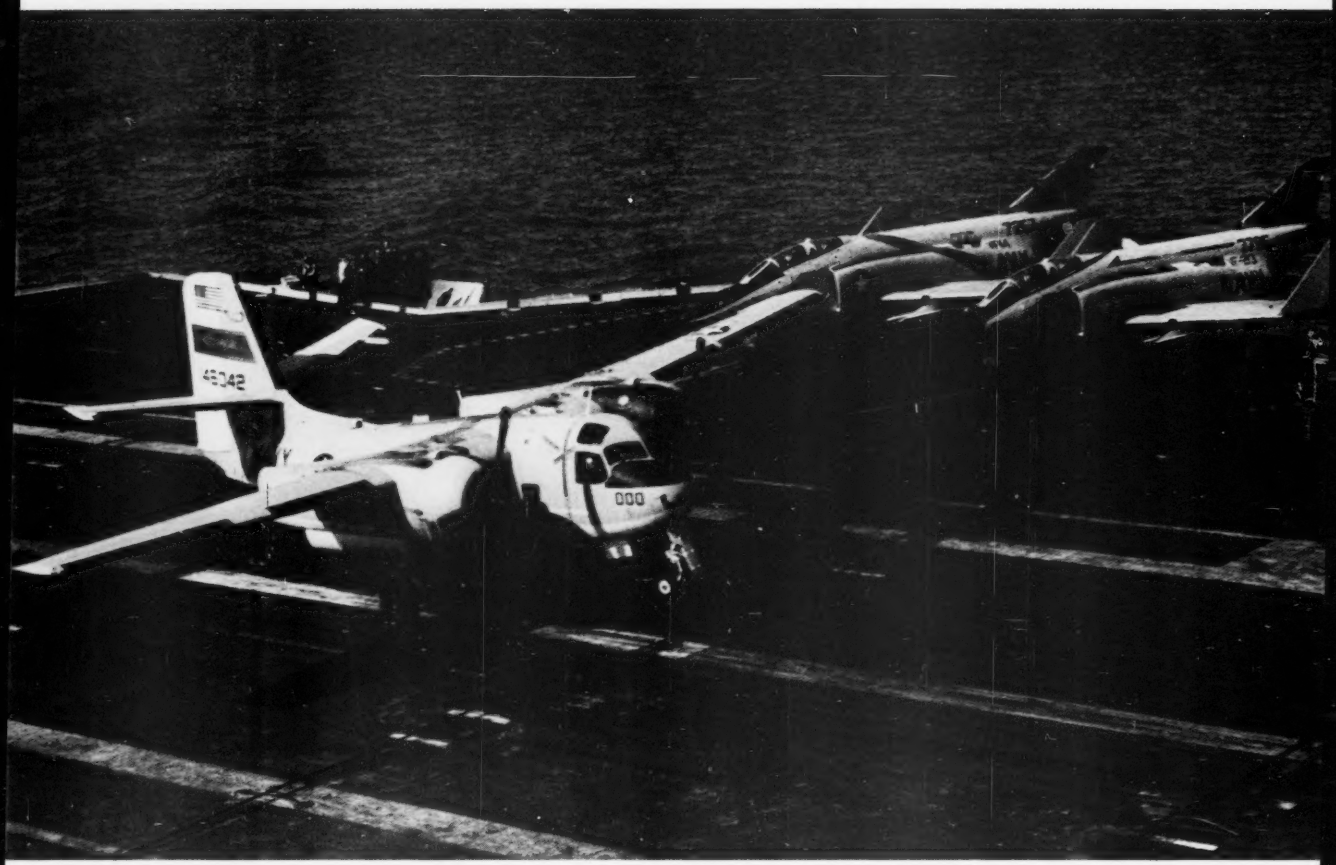
By LTJG Angelo J. Spadaro
VRC-40

ALL or part of this exchange is probably familiar to every LSO who has been aboard ship in recent years. The COD aircraft, specifically the C-1, is still with us and will be around until well into the 1980s. It is an ancient bird and quite simple, especially when compared to its kerosene-burning cousins that inhabit today's Carrier Control Zone. In the arena of air combat, it has a negative threat emission index, and it is commonly referred to as "cute" by people who see it on static display at airshows (much to the chagrin of its pilots).

Despite its old age, simplicity, and cuteness, the COD is facing 5 to 10 more years of frontline service. Its mission is important (ask anyone who is trying to get off USS BOAT 3 days before she pulls in), and until a suitable replacement arrives at the ramp for recovery, the C-1 will continue in its logistics role, namely hauling passengers, mail, and cargo. Just think how long a cruise would seem without those letters from home or the readyroom copy of *Playboy*.

In today's world of cutbacks, most LSOs face the fact that ships will be operating less at sea during cruises and that the embarked air wings will be doing less flying. The result is that many LSOs will be seeing and controlling fewer approaches than their predecessors. Consequently, most LSOs will be seeing less of the CODs than ever.

After observing countless day, night, and all weather recoveries, the air wing LSOs become very proficient at controlling the different air wing aircraft. This experience includes a working knowledge of aircraft flight characteristics and limitations gained through discussion, formal training, and cross training. (How long has it been



since you've heard of someone requesting cross training into the C-1?)

As a result, the arrival of the COD is sometimes greeted with something less than enthusiasm:

"Give it to the S-3 Paddles . . . they used to fly *Stoofs.*"

"Give it to the Hummer type, he used to fly *Fudds.*"

"Give it to the CAG type . . . he'll know what to do with it."

"Give it to Mikey, he'll wave anything . . . hey, Mikey!"

The problem does not rest in any lack of capability or talent. Rather, the problem is a lack of familiarity and communication. The single most effective way to remedy this situation is the education of LSOs and pilots alike. Any LSO who is to wave the C-1 should have at least the same degree of knowledge of the C-1 that he is required to have of all other embarked aircraft. For example, pilots flying the C-1 still get cut lights when a power call is appropriate and green water cuts when they are not appropriate.

The CNO-sponsored LSO Phase One school is making a determined attempt to include an introduction to the C-1 in its already excellent program; however, this is not enough. Knowing when to cut the C-1 is a talent that is developed (as are other LSO talents) through observation and hands-on training – two commodities which are in short supply around the LSO platform. However, these commodities are available, and CAG LSOs should encourage their trainees to seek more experience in controlling the COD from the commands that operate them.

VRC-40 is in the process of setting up a program designed to afford LSOs from various communities the opportunity to gain some experience in controlling the C-1. Ideally, this program would include a brief systems checkout and several flights in the aircraft with the intention of demonstrating, firsthand, the capabilities and limitations of the C-1. Hopefully, this LSO familiarization program will help to alleviate some of the lack of familiarity many LSOs have for the COD and also help to promote more active lines of communication between those of us that fly the CODs and our comrades in the air wings.

Contributing to APPROACH magazine

By Richard P. Shipman
Fixed-Wing Writer

"Gollies! Not now dear, I'm in the midst of my story for Approach Magazine!"

Why you should write for APPROACH. "Me write for APPROACH? You gotta be kidding! I got a D in Freshman English, lower 50 percent in my FITREP on writing skills, and have trouble spelling words longer than four letters. Besides, I'm a stick and throttle man; the only kind of writing I want to do is on the back side of my paycheck. Writing's what you guys at APPROACH are getting paid to do. You're just trying to make us do all the work and write your articles."

Hold on! Not so fast. You've got the wrong idea about writing for APPROACH. You don't have to be an English expert, journalism major, or Ernest Hemmingway to contribute to APPROACH. What we want are your *ideas*. The rest of the stuff we can handle.

We on the staff of APPROACH believe the magazine will only be as good as it is credible. And let's face it; it's hard to produce a credible magazine when it's written by people removed from the "trenches." That's where you come in. You know what's going on in the Fleet. You know what the problems are. You also have ideas about how to overcome those problems. That's what we want from you.

How to contribute to APPROACH. We'll take your ideas any way we can get them. Don't sweat the grammar, punctuation, or typing. We can put into legible form just about any decipherable message that comes in. Usually, the first person to see your contribution is the editor. So don't worry about "embarrassing the command" by submitting something that doesn't have beautiful, error-free typing and 10 letters of transmittal and endorsements. Just get your thoughts to us however you can.

Having just said that, I'm now going to move into a brief description of how we would *like* to see articles submitted. A double-spaced typed rough is easiest for us to work with because it enables us to use your manuscript for editing rather than typing the article all over again. As mentioned earlier, letters of transmittal and endorsements are not necessary, but sometines they can be useful in maintaining records and scoring brownie points with the chain of command. Strictly your choice.

Next, include photos with your article if at all possible. This helps us to illustrate the article and it also gives your squadron or command extra exposure. **CAUTION: Please ensure the photos display no safety violations or other "gotchas" that give readers an opening to write in and gig us.** It would be an understatement to say that our readers scrutinize the photos closely!

Black and white 4 by 5 or 8 by 10 prints are the preferred type, but we can work with good quality color prints and slides. Polaroid, magazine, and newspaper pictures we cannot use at all.

When you have the manuscript and pictures compiled, simply drop them in an envelope and mail to:

"A Pulitzer it ain't! An Anymouse . . . *maybe.*"

EDITOR, APPROACH MAGAZINE
NAVAL SAFETY CENTER
NAS NORFOLK, VA 23511

How to write for APPROACH. The intent of this section is not to give you a writing course in one easy lesson. Rather, it is to give you some guidelines about the style of writing we like. The best thing you can do to familiarize yourself with our style is to read back copies of the magazine.

Our basic philosophy at APPROACH is simplicity. Keep the sentences short. Limit each sentence to one thought. Keep the paragraphs short. And, most importantly, *write like you talk* (within reason, of course). Probably as a result of college, many (most) people tend to equate good writing with elaborately constructed sentences composed of long and complex words. "Gobbledygook," as it is commonly known, is as common to the military as are uniforms (reference that last instruction you tried to read). Pretentious words may impress people in the academic world, but they make for extremely hard reading. And let's face it; when you want people to read your magazine, you have to make it as easy as possible for them. If the reader has to labor, he's going to put the magazine down, and the message we want to get across will be lost.

Let me give a hypothetical example of aviation gobbledygook and how we would probably change it. An article from a fighter pilot might contain a paragraph like this:

"The adversary aircraft was sighted by me in the rear hemisphere. I advanced the throttles to the military position and manipulated the controls in such a fashion as to accentuate the closure rate, obviating the possibility of the enemy obtaining continuity of tracking."

Can you imagine standing at the bar during Happy Hour relating your tale of "There I was at 10,000 feet, manipulating the controls"? You'd probably get thrown out right then and there. What the pilot probably meant to say by the above, and how he would have spoken it, would be something like this:

"I had a tally-ho on the bogey at 7 o'clock closing. I cobbed the power and broke into him to force an overshoot." Now you're talking aviator!

Don't be afraid to use aviation jargon. We assume a certain level of aeronautical knowledge among our readers, and common use terminology and phraseology is important in lending credibility to an article. Besides, if someone doesn't know what a 180 is, you probably wouldn't want to talk to him anyway.

Another area we emphasize, in keeping with our simplicity theme, is word selection. If you can substitute a simple, short word for a complex, long one, do so. "Utilize" for example, appears to be in vogue today. For the life of me, I can't figure out what is gained by "utilizing" something rather than "using" it.

The best way to check your writing for these common pitfalls is to read aloud what you have written. If you find it conspicuously different from the way you would tell the same thing to a friend, consider the words carefully and see if you can't use simpler words and phrases.

What happens to your article after you send it in? As mentioned earlier, the editor is the first person to see your article. At this point, it is virtually impossible to determine if the article will be used or not. Therefore, most acknowledgements will indicate only that "the article is being considered" for publication. Don't take this as a discouragement. Ninety-nine percent of all our contributions receive a response like this.

Once the article has been acknowledged and logged, it is

"It's *different.*"

forwarded to the helo or fixed-wing writer, as appropriate, for workup. How much work is done on the article is strictly a function of how it comes in. If the article doesn't come in in the style described earlier, we'll get it that way. If many changes have to be made to the manuscript, we'll send the author a rough of the revised copy to ensure it still says the same things the author intended.

Without going into our in-house procedures, suffice it to say that articles go through several stages of preparation and much review. Technically oriented articles and those demanding knowledge beyond the level of the immediate staff are reviewed by the various aircraft and maintenance analysts in other branches of the Naval Safety Center.

Common questions (and answers) about APPROACH:

Question: What percent of the magazine is made up of contributed articles?

Answer: This varies from issue to issue, but over the past few years, 75 percent is an average figure.

Question: What should I write about?

Answer: You're the best one to answer that question. What is the biggest problem in your community? What is unsafe about your squadron? What dumb things have you done that others could learn from? What would you do to improve aviation safety if you were squadron skipper? The list is almost endless. We are not afraid of controversy as long as there is a safety message involved. You can contribute anonymously if you prefer. What we don't want are PAO type releases, unless there is a safety message.

Question: How can I get a copy of the neat covers?

Answer: Unfortunately, all we have available are "flats" (uncreased covers). We can send these to you, but they have the APPROACH logo intact. We don't have the funds to reproduce each cover in a suitable-for-framing style, although most of the covers deserve it.

Question: Is humor appropriate in the magazine?

Answer: Absolutely! Over the years, APPROACH has attempted to maintain a lighthearted approach to a serious subject. Safety articles can be pretty dull and hard to wade through. If you can put across your message in a humorous style, that's great.

Question: Why do you eliminate the names of airfields and cities in articles?

Answer: We use the information only to pass on safety messages. By changing the names of airfields and cities, we reduce the chances of embarrassing anyone.

Question: How soon will my article appear?

Answer: The printer requires about 1 month to put out the magazine. This, in conjunction with the lengthy preparation and review process, means that the article or letter you send in today will not appear for at least 3 months. Even then many factors are involved in selecting articles for a specific issue. Therefore, it may be as long as 6 months to a year before your article is published, if no seasonal or time factor is involved.

Question: What qualifications are necessary to be editor of APPROACH?

Answer: Would you believe the only requirement is a set of wings. A journalism and/or writing background would be nice, but is not required. Current contact with the Fleet and recent flying experience are more important.

Question: Why aren't there more (helo, jet, P-3, recip, etc.) articles in APPROACH?

Answer: Unlike the Air Force, the Navy has only one aviation safety magazine for pilots and aircrews. Therefore, we have to cover all aircraft communities plus a variety of safety-related subjects in one 32-page magazine. Obviously this is not the easiest thing in the world. We have established a mix of articles that we believe makes for an optimum magazine. This mix is based on total aircraft and pilot numbers, accident potential by community, and last but certainly not least, by the number of quality articles we receive from the particular community. So, if you want to see more (helo, jet, P-3, recip) articles in APPROACH, start writing 'em and send 'em to us.

Question: If I do get an article published, what's in it for me?

Answer: Silly boy! You get the fame, glory, and honor of being published in the world's premier aviation safety magazine. Beyond that, you get something to fill the voids in your FITREP worksheet. You'd be surprised the mileage some people can get out of one contributed article. ◄

"Old Stoneface is laboring to inject some humor into his stories."

BRAVO ZULU

LT Russell P. Nolan
VA-15

FOLLOWING a routine launch from USS AMERICA (CV 66), LT Russ Nolan completed a weapons system check and was climbing through 2000 feet at 430 KIAS when he experienced high frequency compressor stalls in his A-7E *Corsair II*. With engine temperatures fluctuating, but remaining barely within NATOPS limitations, LT Nolan elected to retard the throttle and continued his climb to a safer altitude. The stalls cleared as he turned back towards the CV, but reoccurred as he advanced the throttle to 5000 pounds per hour. Subsequent reduction of the throttle to idle once again cleared the compressor stalls.

Informing USS AMERICA (CV 66) of his problem, LT Nolan calmly assessed the situation and recommended to the ship that he be recovered onboard as soon as deck space was available. He then proceeded to climb to 8000 feet, where he once again experienced compressor stalls. Switching to manual fuel and setting the throttle at 3500 pounds per hour, LT Nolan was able to keep his *Corsair* airborne and the engine stall-free.

After dumping fuel, LT Nolan set himself up for a straight-in approach to minimize throttle movement and compressor stalls. After a slow descent, LT Nolan transitioned to the landing configuration and secured the fuel dump. Approaching one-half mile on final approach, compressor stalls of even higher intensity occurred. LSOs on the platform observed pulsating fire emanating from the tailpipe in conjunction with the firecracker sound of the compressor stalls.

The disintegrating engine held together long enough for a successful arrestment onboard USS AMERICA. Total time from launch to arrestment was 18 minutes. By his professional handling of a potentially disastrous situation, LT Nolan saved a valuable aircraft and possibly a more valuable life. Well done!

YOU AND YOUR

ONE of the more sticky problems facing the fleet aviator is an insidious attack of distrust concerning his personal flight gear. Comfort and mobility problems can be borne, if not too severe, as long as there is an inherent confidence that the equipment will function properly when called upon. If, however, that confidence is shaken, a potentially dangerous situation arises wherein decisions made to avoid a survival environment are influenced by the lack of confidence in personal gear. The current LPA personal flotation device, although not quite producing this level of anxiety, indicates the possibility for these types of problems.

The problems with fleet distrust of the LPA are divided into two interrelated categories:

1. The LPA collar design may preclude deployment of the collar lobe (sticking).

2. The buoyancy of the LPA is insufficient to support a pilot still attached to his undeployed RSSK (Rigid Seat Survival Kit).

The first problem is exemplified by the following quotation from a recent message:

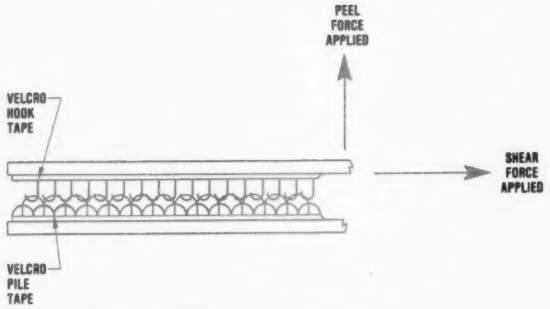
"During a recent safety review, a randomly selected LPA-2 life preserver failed to fully inflate upon normal initiation. Both CO_2 bottles functioned properly. However, the collar lobe would not inflate due to the Velcro tabs."

Other messages reflect the concern shown toward buoyancy requirements:

"This command is most concerned about the RSSK-8 being used as the seat survival kit for fleet aircraft. This piece of bulky equipment, weighing about 34 pounds, is dead weight, especially if the LPA has failed to open or only partially opens when activated by the pilot."

"Tests . . . and recent drownings of fleet aviators indicate full inflation of LPA is required to offset RSSK-8 weight and problems associated with parachute/shroudline entanglement . . . "

Several attempts at solution of the collar design problems have been undertaken in the past with mixed results. The primary focus until recently had been on



DIFFERENTIATION BETWEEN SHEAR & PEEL FORCES APPLIED TO VELCRO TAPE.

Fig. 1

modifications to the Velcro stripping which in effect decreased the amount of Velcro attachment points. The amount of Velcro required is determined by the ability of the collar to remain closed when packed by the rigger, i.e., the collar lobes cannot be allowed to fall from the collar casings.

The design of one solution, demonstrated at the Integrated Logistics Support/Acquisition Management (ILS/AM) meeting in May 1977, based on a characteristic of Velcro which held great promise, failed to fully achieve design expectations. Velcro has great strength (1 lb./sq. in.) when force is applied in the shear direction (Fig. 1) to separate the tape. When force is applied in the peel direction, this strength is minimal (.4 lbs./sq. in.). A design concept which altered the means by which the Velcro stripping was applied to the collar casing attempted to capitalize on this feature.

The current design of the LPA has the Velcro stripping sewn on the outside edge of the tape (Fig. 2), thus the tape is hinged on its outer edge and swings through an arc when acted upon by the inflating collar lobe. The new design (Fig. 3) caused the stitching to be sewn on the inside of the tape causing the inflating lobe to apply more "peel" pressure to the tape.

While this change was aesthetically pleasing and easily implemented, actual testing failed to indicate a solution was

LPA

By LCDR John A. VanDevender
Naval Air Development Center

attained, although performance was improved. Troublesome snagging of Velcro still occurred in certain areas and inadvertent openings were a problem. Part of the inadvertent opening problems arose from the decrease in volume available for packing the collar lobe when the tape was sewn on the inside.

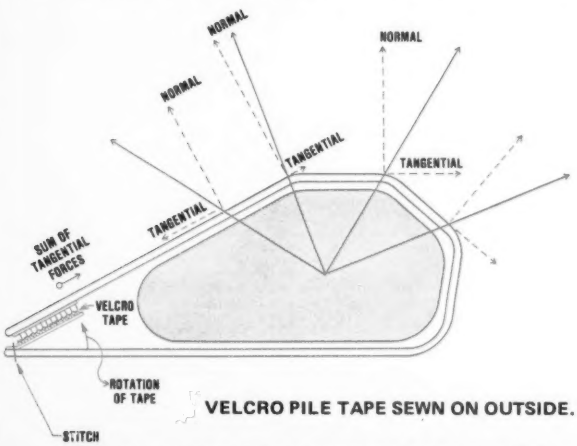
The evaluation process thus resulted in a conclusion that the optimum solution had not been attained and further investigation was necessary.

The LPA is designed such that CO_2 entering the bladders from the bottle transits the lower lobes and is routed to the upper lobes via a connecting conduit. The result of this routing is that the upper bladders lag the lower bladders in pressure and percent of inflation. The pressures do not begin to equalize until the lower bladder is completely expanded. It was postulated that the upper bladder inflation would be more rapid if the lower bladders were slowed during initial inflation by the addition of Velcro restrictors. These strips were not sufficient to stop the inflation of the lower lobes nor even slow it appreciably, but the effect on the upper lobes was significant. To ease the inadvertent opening problem, the size of the collar was expanded to cut down on the stress exerted by the bladders when stowed in the casings.

The final change was brought about by the low steady state inflation pressure of the deployed LPA. It was noted that the 28-gram bottle currently in use brought about a .7 psi pressure in the bladders. By increasing the bottle size to 33 grams, the pressure rose to 1.7 psi, a 150 percent increase! This increased charge put more pressure in the collar during deployment and made for a much firmer bladder after steady state was achieved. Flotation was not affected since bladder volume was not changed.

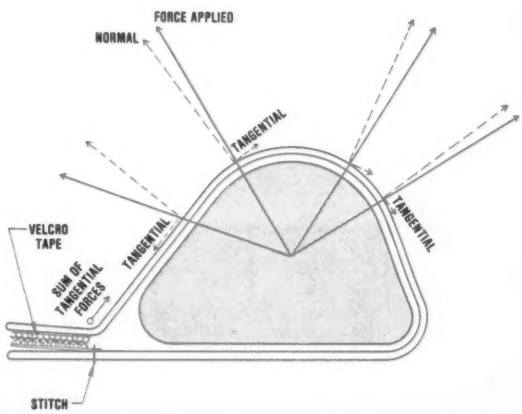
The net result of the four actions (change in Velcro attachment, restrictor addition, increased collar size, and increased CO_2 charge) was a LPA which had a very positive opening of all bladders and an increased resistance to inadvertent openings. This configuration is now in the process of being sent to the fleet. The only delay is that normally associated with procuring the new CO_2 bottles.

The buoyancy of the LPA was questioned by the fleet users facing increased fatalities due to drownings. It was felt



VELCRO PILE TAPE SEWN ON OUTSIDE.

THE SUM OF THE SHEAR FORCES WORKS AGAINST SHEAR RESISTANCE OF VELCRO.



SHEAR FORCES OF EXPANDING BLADDER ACT TO PEEL VELCRO.

During swim tests in a wet suit with the RSSK attached, the RSSK actually provided positive buoyancy for 35 seconds while it was forced under water.

by some that the combined weight of the RSSK and the aviator was such that only a fully deployed LPA would float them. To quote another message:

"... a low-altitude ejection into rough water with a pilot that is injured or under shock with a partially inflated LPA would be a guaranteed fatality."

The Naval Air Development Center (NAVAIRDEVCEN) investigation into this aspect indicated a different magnitude to the problem. It was found in pool tests that a fully packed RSSK weighing 34.5 pounds floated for 28 seconds and then gradually sank. At the end of 9 minutes it reaches its maximum negative buoyancy of -5 pounds. Further testing of the buoyancy of the LPA showed that the average buoyancy of a fully deployed LPA is 79 pounds. Progressively sewing shut of the collar case such that the collar lobe cannot deploy decreases the buoyancy to the following amounts:

1. First 3 inches (both sides) . . . . . 78 lbs.
2. First 6 inches (both sides) . . . . . 73.5 lbs.
3. First 9 inches (both sides) . . . . . 69.5 lbs.
4. Totally sewn shut . . . . . 60.5 lbs.

Depending on the individual, the expected negative buoyancy of the fully configured naval aviator with RSSK attached should be around -10 to -15 pounds. The military specification of LPA buoyancy requirements is 60 pounds. Thus, it can be seen that the current LPA will meet these requirements even if the collar does not deploy at all. To demonstrate both the improved LPA and the effect of water entry without a deployed LPA, I held a pool test with two configurations that the aviator might employ.

In the first demonstration, I entered the water accoutered with a fully packed RSSK, attached parachute case (which the ejectee will have), full body wet suit, SV-2 survival vest and equipment, MA-2 torso harness, and LPA-2. The trapped air in the RSSK immediately brought me to the surface, and I had to force it under water by sitting on it. In this position, I floated for about 35 seconds with my hands out of the water and without moving my feet. I then deployed the LPA.

In the second demonstration, I did not wear the wet suit because it does provide some degree of flotation. In this instance, the RSSK again brought me immediately to the surface and I had to exert a positive motion to sit with the RSSK under me. The same RSSK was used in both

Even without the wet suit, which provides buoyancy, the LPA-2 proved capable of floating a pilot with the RSSK still attached.

demonstrations and it did not support me as long in the second case due to the escape of trapped air during the first demonstration. I gradually began to sink after about 15 seconds and finally deployed the LPA when my feet touched the bottom of the pool (11.5 feet). At no time was the rate of sink such that I could not stop it by treading water. Upon deployment of the LPA, I immediately surfaced.

While the above demonstrations were not intended to be scientific, they do support the previous findings concerning flotation of the RSSK and the capabilities of the LPA. The altered LPA inflated promptly with no hangups, and easily floated the entire configuration.

It is felt that the new configuration will end the present Fleet problems with the LPA, and steps are being taken to implement the change as rapidly as possible. The change can be accomplished at the organizational level as soon as the larger bottles arrive.

The problems with fleet aviator drownings, however, will not be significantly affected by this change. The biggest causes of drownings are, most likely, failure to deploy the LPA and/or parachute entanglement. Both of these problems are being addressed by the use of automatic devices. In the interval, naval aviators should be aware that the shock of ejection followed by rapid water entry (especially cold water) can cause confusion and delayed reaction time which can cause minutes to pass before they start to function intelligently. The only cure for this situation is a well thought out plan of action prior to ejection and the practice of survival procedures.

In conclusion, the changes to the LPA now being implemented should reinforce pilot confidence in his equipment. It is a sound design which addresses all of the known problems associated with the LPA. The Fleet Liaison Office at NAVAIRDEVCEN is openly solicitous of inputs about this and other problems (Autovon 441-2847) with flight gear. As other developments occur, they will be brought to the Fleet as quickly as possible. ◄

You know you are overweight when you are living beyond your seams.

Ace L.

Few incidents and accidents which are written for APPROACH are one-of-a-kind. The first of the two stories which appear was written a month before the second one. The subject is the same, but the details are different. Weighing and marking cargo correctly has been a thorn in the side of cargo haulers ever since aviation has had aircraft with a capacity to haul cargo.

It didn't look right

THE plane commander of a C-118 taxied into the terminal area to pick up about 10,500 pounds of cargo to be flown cross-country. After the aircraft had been shut down, the crew disembarked to stretch their legs and get the aircraft loaded.

A terminal representative directed the flight attendant to the cargo, which was on pallets. Two pallets were bound together, one on top of the other, and each pallet was marked 572 pounds. The bound pair was tagged 1144 pounds. The pair would not fit through the cargo door, so the pallets were separated.

The flight attendant calculated that they could only take 15 pallets (8580 pounds) because of the cube. Fifteen pallets were loaded on the aircraft. When the plane commander approached the C-118 he noted a nose-high attitude. He didn't like what he saw, and after some discussion with the loading crew, a *single* pallet was removed and weighed. *It topped out at 1235 pounds!*

The loaded cargo actually weighed 18,525 pounds vice 8580 pounds. Whereas the flight attendant had calculated their gross weight at 99,000 pounds, in reality their weight was 109,000 pounds. Even more important, the aft CG limits were 31 percent MAC (mean aerodynamic chord), which was mighty close to the aft limit of 33 percent.

Had the flightcrew accepted the aircraft, they would have been 2000 pounds over the maximum structural strength limitation and 5000 pounds over the maximum takeoff gross weight limitation. One needs only a modicum of imagination to envision what might have happened if the aircraft crew had relied solely on the poor performance of the terminal crew. Usually, flightcrews are at the mercy of the loading crew, but in this instance the aircraft commander questioned the load and by so doing avoided disaster.

Terminal crews must have uppermost in their minds that load weights must be accurate and clearly marked. Whenever pallets are combined, new weights must be clearly displayed to avoid any misinterpretation. ◄

HELP!

By LCDR Tom Parker, Jr.
VR-56

THE C-9B transport aircraft taxied to the duty runway, and the copilot, in response to the Before Takeoff checklist, confirmed the takeoff gross weight as 102,500 pounds, Stab Trim set, and correct bug speed (V_2) set. Takeoff clearance was received, acknowledged, and the takeoff roll begun. There were 65 sailors onboard, 6000 pounds of cargo on two pallets, 6 crewmembers, and 20,000 pounds of fuel. At V_1, the copilot called go and shortly thereafter called rotate.

The pilot, upon hearing rotate glanced at his airspeed indicator to confirm that they had in fact reached the briefed rotate speed, then eased the yoke back. The nose would not come up. He pulled again, and it still would not come up. By now the speed was up to 138 knots, and the aircraft was rapidly running out of runway. They were well past decision speed, so an abort was out of the question. The pilot then hauled back hard and finally got the aircraft airborne. On climbout, the aircraft handled satisfactorily. Therefore, considering the weather and the fact that they were 3400 pounds over max landing weight, the aircraft commander elected to continue on to the next stop 1½ hours away. En route, the TAC (transport aircraft commander) directed the loadmaster to recheck his weight and balance form and figures. The loadmaster checked and rechecked his figures but found no errors.

The aircraft commander elected to land at the en route stop using 25 degrees flaps vice 50 degrees to have higher approach and landing speeds. The approach and landing were uneventful, except that full nose-up trim was used throughout. After parking in front of Operations, the TAC requested that the pallets be reweighed. Only then was it discovered that the pallet weight given to the loadmaster was 1635 pounds less than what the pallets actually weighed.

Unfortunately, this is not an uncommon occurrence. To get maximum utilization from the C-9B, it is regularly scheduled for a max crew duty day (16 hours with up to six stops). En route stops are scheduled for 30 or 45 minutes. In order to meet this demanding schedule, the aircrew must depend on Ops/terminal personnel to handle manifests, weigh and tag baggage, palletize cargo properly, and list correctly all weights for the flightcrew. Any breakdown in this chain of events could produce disastrous results.

Also, we are often faced with cargo on pallets that should not be there. This often causes the pilots, crewmembers, and passengers some anxious moments. One of our crews took off recently, and gasoline began leaking from one of the pallets. An immediate landing was made, and it was found that a disassembled motorcycle was buried in the pallet. The gas was leaking from a partially filled gas tank. DUMB! Four months prior to that, another crew had a very similiar problem with an improperly serviced fuel bowser. Raw fuel running down the aisle with 65 passengers onboard is enough to give anyone apoplexy. Unauthorized or poorly prepared cargo on transport airplanes is not a new problem nor is it limited to the C-9. A few years ago, a good friend of mine almost spun a COD in at the boat because someone stuffed 600 pounds of toolboxes into the aft head and did not tell any of the crew. A VR pilot could spend hours telling similar tales of woe.

The point is, gang, all of us VR folks need help. We need it from Ops/terminal people and from the airlift coordinators. Everyone involved in an airlift should be cognizant of all the provisions of CNALINST 4630.3F or CNAPINST 4630.2H. These instructions spell out in detail what must be done and by whom, to properly execute an airlift. If these instructions are followed, we can assure all of our passengers that they will get cheerful service, cold sodas, hot coffee, pizza, good sandwiches, and a fast, safe, uneventful ride to their destination.

Airfield Profile No. 5:

NAS Willow Grove

By ATC Division
NAS Willow Grove Ops

Philadelphia, home of the Phillies, Flyers, Fury, 76ers, Eagles, Hoagies, Mummer's Parade, and the Army/Navy Football Game. In addition, transient flightcrews generally report the natives to be friendly outside the confines of "The Grove." These attractions bring a lot of refugees from the backwoods to explore the wonders of the big city, and the following "gouge" is designed to minimize the hassle and maximize the liberty during your visit.

What's here. "The Grove" is a going concern! NAS Willow Grove is the largest and busiest of six remaining Reserve naval air stations. It's a cost-effective operation with every branch of the service aboard except the Coast Guard. The Naval Reserve flies P-3s and C-118s; the Marines fly A-4s and CH-53s; the Army Reserve flies UH-1s, UH-58s, and U-3s; the Air Force Reserve flies C-130s; and the Pennsylvania National Guard flies 0-2s. This results in a busy airport with some 90,000 operations a year and very busy weekends!

The airfield. Located 17 miles northwest of center city Philadelphia, the airfield is under the northern edge of the Philadelphia TCA. The floor of the TCA is 4000 feet over the field lowering to 3000 feet, 5 miles south. The field has one active runway, Runway 15/33, which is 8000 feet long. Operating hours are 0700-2200 local, Monday through Thursday, and 0700-2400 local, Friday through Sunday. The airfield elevation is 361 feet. The Naval Weather Service Environmental Detachment aboard offers 24-hour service. Customs inspections are not available at NAS Willow Grove.

Transient servicing and maintenance. Willow Grove is PPR for RON aircraft only because of limited parking space. A call to Navy Operations at Autovon 991-1252/4 will assure you a space. Prior coordination with Navy Operations and the activity concerned is required to use other than the transient line for parking. Willow Grove's two Patrol Squadrons, VP-64 and -66, have established a host agreement schedule to assist transient P-3s encountering maintenance problems. No fuel is available from 2300 to 0700 local. Priority fueling is established for Reserve training, Friday through Sunday. Limited transient maintenance is available Wednesday through Sunday from 0800-1600 local only. Hangar space is not normally available for transients. Pilots of F-4 and A-5 aircraft should not transit Willow Grove, as no starting capability exists.

Arresting gear. Willow Grove is equipped with four different types of arresting gear. E-28 bidirectional arresting gear is located approximately 1500 feet from each end of the runway. Boots are normally installed only on the abort end of the active runway. Boots can be installed under the approach end for fly-in arrestments with 10 minutes notice to Tower.

In case you missed the E-28, an E-5 chain gear is used as a backup abort gear in the overrun at the end of Runway 15 only.

An M-21 Morest is available midfield when the Marine Reserves are drilling. Its location is not published in FLIP, so the Control Tower will advise "tailhookers" when it is rigged. Practice arrestments are frequently solicited. Advance notification to the Tower of expected landing weight and engagement speed is necessary to soften your jolt.

Runway peculiarities. The approach end of Runway 15 is approximately 60 feet lower than that of Runway 33, resulting in an overall .08-degree slope. Some aviators have been known to land long on 33 due to the downslope. For those aircraft having no stopping problems, convenient turnoff taxiways exist to aid in clearing the runway promptly. A new turnoff taxiway is now under construction on the south end.

Runway lighting/OLS. Sequenced flashing approach lights are available on the approach to Runway 15. Runway end identifier lights are available on the approach end on Runway 33. Mk-10 portable optical landing systems are located approximately 1700 feet from each end of Runway 15/33. The mirror angle is set at 3 degrees for Runway 33 and 3.5 degrees for Runway 15.

Continued

The approach to Runway 33. Note the high school and elementary school just to the right of centerline. Avoid getting low or to the right of centerline on this approach.

The approach to Runway 15.

VFR arrival patterns. NAS Willow Grove traffic patterns are designed for optimum noise abatement and safety. All turns in the pattern (except for Willow Grove Flying Club) are to the south and west. This means right-hand traffic to Runway 15 and left-hand traffic to Runway 33 (Willow Grove Navy Flying Club makes right traffic to Runway 33 and left traffic to Runway 15). Pattern altitude is 1800 feet except for light helos and category "A" aircraft which fly at 1200 feet.

Arrival hazards. Willow Grove is surrounded by other airports, both civilian and military. Within the Willow Grove Control Zone, there are five civilian airports. In addition, Warminster NADC is 3.5 miles east of NAS Willow Grove. Within 20 miles, there are 13 civil and military fields, including at least three heliports and one glider port. The friendly skies are definitely crowded in this area. A special reminder: in accordance with FARs, aircraft arriving or departing uncontrolled airports within the airport traffic area (two such airports exist here) do not have to call Willow Grove for clearance or advise that they are proceeding *through* our traffic pattern. They normally do but heads-up is a must for those 10 percent that don't!

Obstructions. The highest obstruction in the area is a lighted antenna farm 10 miles southwest with an elevation of 1421 feet MSL. A lighted monument with a height of 529 feet is northwest at two and a half miles, under the base leg to Runway 15. A hill, 2 miles north, stretches across the approach path to Runway 15. Going too far below glidepath on this approach can be detrimental to your health.

IFR arrivals. Arriving IFR flights can normally expect radar vectoring from Philadelphia Approach Control with a GCA pickup. En route descents using single-frequency approach frequencies for our high-altitude visitors are available, so feel free to request one when handed off to Philly Approach. TACAN, VOR, and ADF approaches are also available upon request, or when GCA is down. A 30-minute delay can be expected for a high-altitude penetration. If an en route descent cannot be accepted, plan accordingly. Filing into Willow Grove, entry points to look for are: Mazie intersection, Bucktown intersection, Woodstown VORTAC, or New Castle VORTAC. From these points, you will be handed off to Philadelphia Approach Control for radar vectors to a Willow Grove approach. The particular vectored route depends on the flow of traffic around Philadelphia International Airport.

Departure consideration. All transient aircraft departing IFR can expect a standard instrument departure to be issued. Both high- and low-altitude SIDs are available. Copies may be obtained at Base Operations.

VFR departures, when using Runway 15, are expected to turn to a southwesterly heading at the south field boundary.

Runway 33 departures should climb on runway heading until reaching 2000 feet. Your adherence to these published departure procedures will ensure continued harmonious relations with the surrounding communities.

Noise abatement. NAS Willow Grove is into the AICUZ business in a big way. Although heavily encroached to the south and east, the Base maintains good relations with the surrounding communities by vigorously practicing noise abatement procedures. These practices include a prohibition on FCLPs, no touch-and go's after 2200 and before 0800, no high-power turnups after 2000, and no ops during church hours, to name a few. The phone rings off the hook, however, when you get low on the approach to Runway 33, or when you fail to maintain pattern altitude while circling the field. If possible, you should avoid drifting right of centerline on final approach to Runway 15 to avoid an elementary school one-half mile from touchdown. Also, transients frequently cause grief by using afterburner longer than necessary on departure. The assistance of all transients in minimizing the noise impact is strongly solicited.

Personal considerations. NAS Willow Grove is served by public transportation, but POV is necessary for afterhours and on weekends when this service is limited or not available. An auto rental agency is located just across from the Base.

When food service or billeting is not available on station, transportation for transient crews will be provided to a local restaurant/motel.

Berthing facilities are available for transient crews. It should be noted that both officer and enlisted facilities are normally filled to capacity during the weekend and often for extended periods throughout the summer.

The COM Open Mess is available Wednesday through Sunday; the EM Club is open 7 days, but provides food service only Tuesday through Sunday. The Galley offers outstanding fare 365 days a year, and there is a snack bar open during daytime hours, Tuesday through Sunday, in the Operations Hangar. A small but well-equipped Navy Exchange is located aboard with most of its branches operating Tuesday through Sunday. Special Services features an "all rates" swimming pool, movies every other night, bowling alleys, handball courts, and tennis courts, to name a few of the major attractions.

NAS Willow Grove and the surrounding area have an abundance of cultural and historical sights and sounds. Few cities can boast of the wide spectrum of points of interest that Philadelphia has. We here at NAS Willow Grove look forward to making your stay pleasant, memorable, and safe.

GROUND ACCIDENT

THE helicopter crew strapped in the CH-46D for a cross-country flight from Seaport to Inlandburg. Their plans were to refuel and return to base. They filed an IFR plan although VMC prevailed all the way.

About halfway to their destination, cruising at 3000 feet, the copilot noted a substantial hydraulic leak in the forward transmission drip pan area. He and the HAC discussed the problem and a decision was made to land at the nearest airport. They headed for a small civilian airport just a couple of miles away. The HAC shot an uneventful precautionary landing.

Prior to shutdown, the APP was started and the hydraulic leak increased. Although the rotor brake was applied, it did not slow the blades down and they were allowed to coast to a stop. The crew carefully looked things over and found the leak emanating from a crack in the rotor brake hydraulic return line.

The line was disconnected, removed, and taken to a nearby National Guard facility for repair. It was welded, but not pressure checked. The line was reinstalled, the system was serviced, and a pressure check was made with the hand pump. The leak was reduced, but there was still a loss of fluid when pressure was applied.

The HAC decided to isolate the system, since the rotor brake was not essential for flight. The switch was turned off, the brake light extinguished, and the appropriate circuit breakers were pulled. Additionally, the hydraulic switch was put in isolate. The HAC decided to turn up and check that all leaks had been stopped.

When the ECL was placed in START, the main rotor blades began to turn. Number 1 ECL was advanced to FLY and the rotor brake light illuminated. The HAC and copilot discussed this strange event and since both rotor brake circuit breakers were pulled, they decided the light must be erroneous. Shortly thereafter, the crew chief observed smoke coming from the forward pylon and called for shutdown. The ECLs were stopcocked and the rotors coasted down. Smoke still was observed coming from the drip pan and lower transmission.

The drip pan was lowered on one side and the crew chief tried to smother a fire with the hand-held fire extinguisher, using short bursts of CO_2. However, the heat was too intense and the fire kept reigniting. The airport had no fire extinguishing agents, but a crewman spotted a garden hose and bucket, and the fire was extinguished with water.

As is so often the case, if proper procedures had been followed, this would have been an incident with no damage. The HAC violated NATOPS when he used the rotor brake to shut down after the precautionary landing. NATOPS specifically cautions: "Do not apply the rotor brake if hydraulic fluid is evident in the forward transmission area." Also, the HAC's decision to start up to check for leaks was questioned, and he should have shut down as soon as the rotor brake light illuminated. The time spent turning may well have created the heat necessary to ignite the fluid. Further, the crew chief should have emptied the hand-held fire extinguisher in one continuous discharge, rather than short bursts.

After the helo had been hooked to a nearby military base, it was discovered the rotor brake pucks were dragging, even when the rotors were coasting to a stop. The cause of the rotor brake coming on and dragging, after the circuit breakers were pulled, is unknown. The helo incurred limited damage. ◄

Letters

Erosion of Flight Discipline

FPO, New York – In "The Pilot in Command Is Responsible" (APPROACH, MAY '78), you say ". . . .every aviator must make his own personal judgment about the situation as it affects his aircraft and his ability to ensure its safe operation."

This surely is a departure from the very basics of formation flying. In the name of safety, you propose severe erosion/destruction of flight discipline. According to OPNAVINST 3710.17H, pgs. 2-8, I quote: "The formation leader is responsible for the safe and orderly conduct of the formation. Pages 4-11 further lays the responsibility upon the formation leader for thorough duties.

I propose an alternative solution: it is the command's responsibility to ensure formation leaders' ongoing qualifications are met and exceeded.

LT William W. Brown
HC-6 Det
USS SAN DIEGO (AFS 6)

● If all flight leaders were perfect and never made mistakes, then there would never be a need for wingmen to think for themselves. Since flight leaders are human and do err, however, it is the wingman's right *and responsibility* to do his share to ensure safe completion of the flight. If the wingman's aircraft is being jeopardized (in a peacetime situation) and the flight lead is not taking appropriate corrective action, we see no justification for the wingman to risk his airplane and life in the name of flight discipline. As the old saying goes, the only thing worse than a smoking hole in the ground is two smoking holes in perfect formation.

As you point out (and as was stated in the article, "Flight Leadership: A Major Responsibility," FEB '78 APPROACH), qualification standards and continued screening of flight leader ability are vital responsibilities of every squadron. This will go a long way in reducing the obviously undesirable situation where the wingman has to take action on his own to avoid disaster.

Re: "Unsymmetrical Recirculation Effects"

FPO, New York – The article "Unsymmetrical Recirculation Effects" in the May 1978 APPROACH was excellent. The picture and last paragraph on Pg. 10 may have solved the problem of unsymmetrical recirculation of air, but it

APPROACH welcomes letters from its readers. All letters should be signed though names will be withheld on request. Address: APPROACH Editor, Naval Safety Center, NAS Norfolk, VA 23511. Views expressed are those of the writers and do not imply endorsement by the Naval Safety Center.

reopened many old safety problems encountered aboard nonaviation ships. In the picture an SH-2 helicopter is landing aboard a 1052 Class FF with hangar door partially open. But, look at all the people just inside the hangar. Are they authorized personnel? Do they have proper eye and ear protection? If a crash occurred and a fuel fire broke out, that hangar door down would have been a nice fire break.

Last but not least, with the hangar door partially open, the rotor downwash does go into the hangar, often with enough force that the air pressure built up inside can cause the retracted hangar door to come forward. It was a real eye opener for *this* pilot a few years back. Tiedown chains may be rigged to help prevent this phenomenon, but the other safety considerations remain.

Are there any other LAMPS crews in the audience with similar experiences?

LCDR M. R. Sutton
Officer-In-Charge
HSL-33 Detachment

● See next letter.

FPO, New York – While reading the article "Unsymmetrical Recirculation Effects" in the MAY '78 issue of APPROACH, we noticed two statements that refer to opening hangar doors to reduce the structure's interference with rotor downwash. This creates serious safety hazards, namely:

● A FOD hazard is created both in the hangar and on the flight deck due to the rotorwash blowing into the hangar.

● In the event of a fire on deck, the burning fuel can flow into the hangar; and, depending on the type of ship, can flow into the interior of the ship, with the obvious results.

● The safety of personnel in the hangar is jeopardized (a recent H-2 flight deck accident attests to the missile hazards associated with helo rotor blades departing the aircraft). While the door may not completely stop these hazards, their velocity will be slowed down.

● Finally, there have been documented instances where the hangars have started to move out toward the flight deck due to the rotorwash blowing into the hangar.

Having the hangar door open is contrary to what is being taught at the West Coast Helo Indoc School course for HCOs/Air Officers and is contrary to COMNAVSURFPAC SOP for shipboard flight operations.

While we do feel that the article has merit, and that the effects are something that helo pilots need to be aware of, the safety hazards created by opening the door(s) is an unacceptable trade-off.

LCDR R. L. Trotter, HSL-31

● The hazards described are certainly very real considerations in any decision to land the aircraft with the hangar doors open. A more appropriate statement in the article would have been, "Opening hangar doors will reduce the structure's interference with rotor downwash, but also opens the possibility for other, and perhaps, greater dangers."

Re: "Thunderstorms"

FPO, Washington, DC – As a member of the National Transportation Safety Board I receive APPROACH on a regular basis, and as a former Navy pilot I read it with much interest.

The JUN '78 issue contains a two-page color depiction of a thunderstorm and associated air turbulence. I would appreciate receiving a copy of this depiction in chart form, if available. The two-page layout could be taped together, but a single chart is much easier to use for reference.

Francis H. McAdams

● A larger (2- by 3-foot) and more extensively detailed chart from which the illustration appearing in APPROACH was adapted is available through Flight Deck Products, Ltd., RR1, Inglewood, ONTARIO LON 1KO, Canada. The title is "Portrait of the Thunderstorm."

Re: "Cargo Load Shifts"

NAS, Norfolk – Your June centerfold article certainly raised some adrenalin flow rates, but not in the same sense one might expect from *PLAYBOY* or similar magazine encounters.

I don't know who the author is, but if he was trying to set the rotary wing community back a decade or two, he's on the right track. His approach runs stride for stride with the old cliche, "If you keep the aircraft locked in the hangar, you won't have to worry about accidents."

I would suggest the author reschool himself on the role of the CH class helicopter, erase everything except the title, then start over and discuss the precautions and procedures to best avoid load shifts in single rotor helicopters, while utilizing the aircraft to its full mission capability.

LTCOL D. N. Anderson, USMC
COMNAVAIRLANT Staff

Posters on the Back Covers

THE Naval Safety Center has instituted a new policy of printing safety posters back-to-back on the back covers. Other than outsized technical or instructional posters which do not lend themselves to this format, the back cover posters will constitute the entire Naval Safety Center poster program after current stocks are exhausted.

As always, poster ideas are solicited from the Fleet. Suitable credit will be given its author and unit.

Vol. 24 No. 2 NAVAIR 00-75-510

approach

CONTENTS

DEPARTMENTS

Pg. 1

Pg. 16

Pg. 20

Our product is safety, our process is education, and our profit is measured in the preservation of lives and equipment and increased mission readiness.

PURPOSES AND POLICIES/APPROACH presents the most accurate information currently available on the subject of aviation accident prevention. Contents should not be considered as regulations, orders, or directives and may not be construed as incriminating under Art. 31, UCMJ. Photographs used to illustrate articles in APPROACH do not necessarily reflect the actual aircraft, air stations, ships, and individuals that are described in the text.

PHOTOS/Official Navy or as credited. Non-naval activities are requested to contact NAVSAFECEN prior to reprinting APPROACH material.

CORRESPONDENCE/Contributions are welcome. The right to make editorial changes to improve the material without altering the intended meaning is reserved. Reference to commercial products does not imply Navy endorsement. Views of guest-written articles are not necessarily those of NAVSAFECEN.

DISTRIBUTION/Requests for distribution changes should be directed to NAVSAFECEN, NAS Norfolk, VA 23511, Attn: Safety Publications Department. Phone: Area Code 804, 444-1321.

PRINTING/Issuance of this periodical approved in accordance with Department of the Navy Publications and Printing Regulations, NAVEXOS P-35. Library of Congress Catalog No. 57 60020.

CREDITS/The Navy's all-weather attack aircraft, the A-6 *Intruder*, is the subject of this month's cover painting by Craig Kavafes. The painting is courtesy of Grumman Aircraft Corporation.

☆ U. S. GOVERNMENT PRINTING OFFICE: 1978—735-047/08

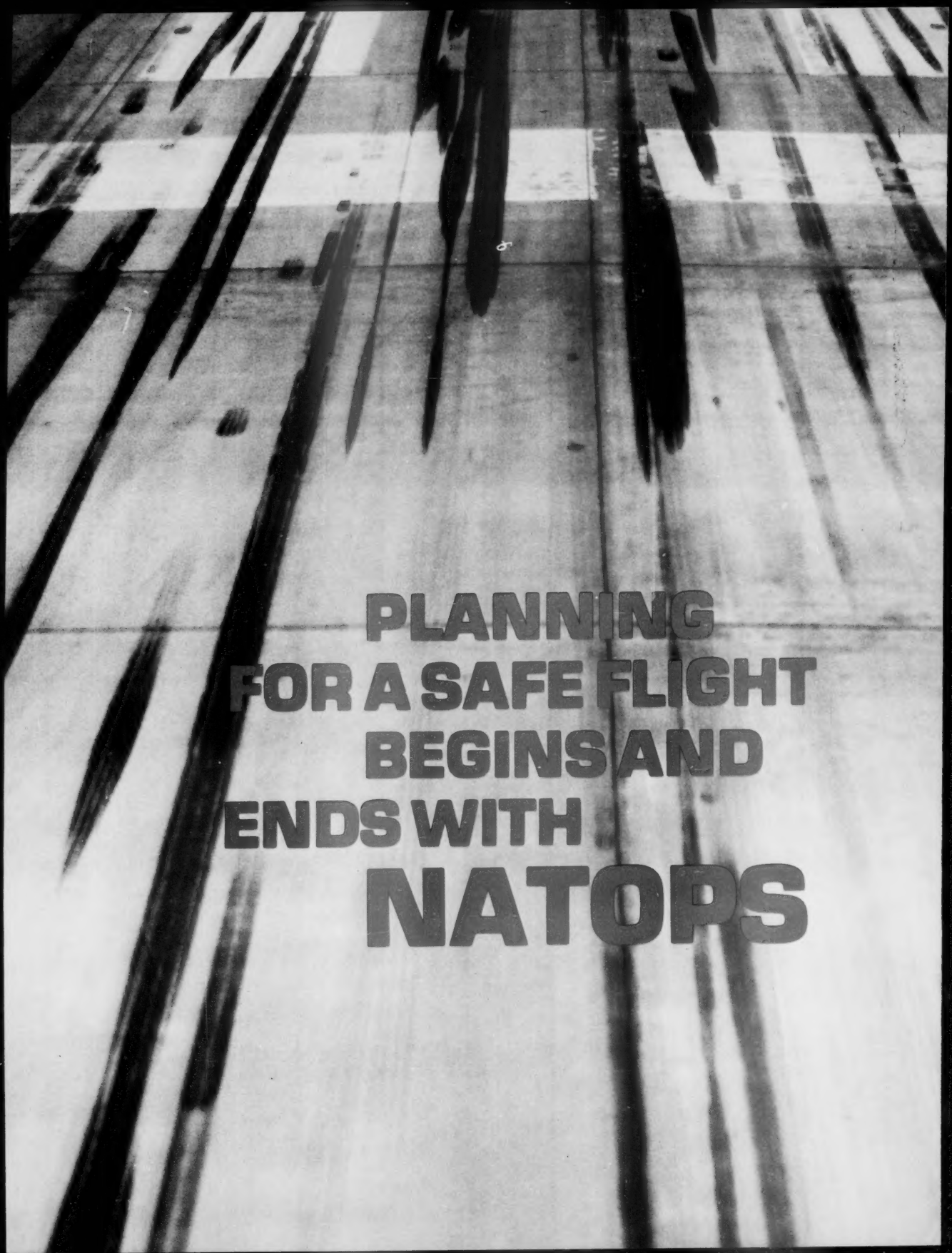
STAY ALERT...

DON'T GET HOOKED!

PREPARED BY
NAVAL SAFETY CENTER
NAVAL AIR STATION
NORFOLK, VIRGINIA 23511

Idea contributed by AQ2 M. W. Judah, VF-111

C83-GI-578


PLANNING
FOR A SAFE FLIGHT
BEGINS AND
ENDS WITH
NATOPS